Fall 2018 Math 103 A&B Syllabus

(4 Credits) at UWSP at Wausau, 1:30-3:10 on Mon. and Wed. in Room 089

Instructor: Professor Paul Martin, Office at 087-B, telephone: 715-261-6272, email paul.martin@uwc.edu .
Office Hours: MWF 12:00 –12:50 and at 10:00-10:45 on Tue. & Thur. or by appointment

Text/Materials Needed for Class:

- Access to the e-text. It is available at http://pages.uwc.edu/shubhangi.stalder/Developmental-and-intermediate-Algebra-Textbook2nded.pdf and is free. You are recommended to download the PDF file and save it locally so you don't need to have internet access to use it.
- A binder for organizing class notes, homework, quizzes, and exams.
- Each day I will provide a handout with a skeleton of notes on the material and homework problems for that day.

Objectives: This course is intended to prepare the students for success in the next course, College Algebra Mat110.

- Introduce algebraic objects: number sets, variable expressions: polynomials, rational expressions, radical and fractional exponent expressions, and function relations.
- Establish the foundations of arithmetic operations for integer, rational and real numbers and extend these to polynomial, rational, radical and function expressions.
- Extend the rules of integer exponents to rational exponents and apply these rules in simplifying algebraic expressions.
- Learn techniques of factoring to decompose and combine algebraic expressions and for solving polynomial equations.
- Solve equations and inequalities involving polynomial, rational, radicals and powers on one variable.
- Work in the Rectangular/Cartesian coordinate system for finding distances, midpoints, and equations of circles. Also be able to compute a list of solutions for an equation in x and y and plot them to get a sense of the graph of the equation.
- Study linear equations in two variables, their graphs and the interpretation of their parameters and how to obtain linear equations from a variety of information, e.g., $y = mx + b,\ and\ \ y = y_1 + m(x - x_1)$.
- Plot and algebraically solve systems of linear equations in two variables.
- Formulate simple real world applications in one or more variables and solve them algebraically and/or graphically.
- Where appropriate, use a scientific calculator or spreadsheet to explore data and make predictions.

Course information: Introduction to College Algebra (MAT103) is a four credit course approved throughout the University Wisconsin System. This course counts as 3 elective credits and 1 non-degree credit. Introduction to College Algebra is an accelerated math course that covers basic algebra and will be significantly more demanding than a high school algebra course. Expect to have the material covered at two to three times the pace of high school. Upon successful completion of this course (C or better), students should be able to complete any of subsequent courses MAT110, MAT 124, MAT 117, or MAT 108.

Workload and Grading Policy	**Hours**
Typical Class Period 1. We'll start with dealing with any final questions on the homework that is due that day and then I will collect them. 2. Next we will work through concepts and problems from the packet of notes/homework for the day (This will be handed out in the previous class period.). Much of the class period will be spent discussing and working through confusing or difficult problems. This may involve sharing at the board and working through the details of what is being asked and what reasonable responses might be. 3. Occasional short quizzes on material from the previous or current class period content. 4. Finally, I will hand out the materials for the next class and give a brief overview.	~4 hrs/wk (~58 hours)
Out-of-class time: **1.** Complete any remaining problems on the worksheet for the previous class and have it ready or almost ready for submitting at the beginning of the next class. **2.** Read through the notes for the next class day and the associated text or videos from the e-text and do what is easy and at least identify problems that you are unsure how to complete. Then we can deal with the harder stuff in that next class meeting.	~6 hrs/wk (~80 hours)

Attendance: You are expected to attend <u>all</u> class periods barring unforeseen circumstances. No penalty is applied toward your grade for missing up to 3 class periods (1.5 weeks of class). The homework will still need to be made up for missed classes. If you miss more than 3 class periods, your course point total will be reduced by two points for each absence beyond 3 days. Exceptions to this policy due to extenuating circumstances may be made at the instructor's discretion.

Your <u>grade</u> in MATH 103 will be determined by <u>two factors</u>: 70% on exams, and 30% on collected homework and class participation.

A. Exam 1	10%	**Grading Scale:** Standard grading scale is used where scoring in the 90's, 80's, 70's, 60's, and below
B. Exam 2	15%	

C. Exam 3	20%	will correspond to some kind of A, B, C, D, and F. **Total % =** $\mathbf{0.1A + 0.15B + 0.2C + 0.25D + 0.3E}$
D. Final Exam	25%	
E. Homework and Class Participation	30%	

Exams: There will be plenty of time to complete exams and the goal is mastery-based learning. If you are not able to finish an exam in class, you will be allowed to complete the exam later by appointment at the instructor's office. There will also be an opportunity to retake an exam (after corrections are made) to increase your understanding and also increase your grade. Any retakes must be completed within a week of the original exam date. To qualify for this option, you will first need to briefly present corrections on missed problems to your instructor. This option is available to all students. When your original score is 70% or higher, you will only need to do the problems you missed when taking the retake version of the exam and you can earn up to 60% of your lost points back. If your original score was less than 70%, you will need to retake the whole exam and your score will be the retake % with a cap at 85%.

Semester Calendar for Math 103 Course Fall 2018

The video/text assignments are to be viewed/read and Video Log Questions Attempted before class. Video links are embedded in the appropriate section of the e-text.

	Sun	Mon	Tu	Wed	Th	Fr	Sa
September		**3.**	**4.**	**5.** Module zero, Counting Project, and other counting systems. Dev Math	**6.**	**7.**	**8.**
	9.	**10.** 1.2, 1.4,1.5 Number sets, Fractions, irrationals, equiv. fractions, sci. not., number lines, rounding	**11.**	**12.** 1.5, 1.6, 1.7, Natural and Integer exponents	**13.**	**14.**	**15.**
	16.	**17.** 1.8 Rational exponents and radicals	**18.**	**19.** 1.9, 1.10 Polynomial and rational expressions, functions	**20.**	**21.**	**22.**
	23.	**24.** 2.1 Addition of "like" objects, decimals, polynomials, fractions.	**25.**	**26.** 2.2, 2.3 Multiplication and Subtraction of numbers and algebraic objects. Exam I Review Sheet is available.	**27.**	**28.**	**29.**
October	**30.**	**1.** 2.3 Subtraction of rational expressions. Exam I review.	**2.**	**3. Exam I**	**4.**	**5.**	**6.**
	7.	**8.** 2.4 Factoring numbers and greatest common factor and least common multiple of numbers and algebraic expressions.	**9.**	**10.** 2.5 Factoring Trinomials and binomials	**11.**	**12.**	**13.**
	14.	**15.** 2.6 Multiplication of rational and radical expressions	**16.**	**17.** 2.7 Division of whole #'s, rational expr., polynomials	**18.**	**19.**	**20.**
	21.	**22.** 2.8 Order of operations, complex fractions	**23.**	**24.** 3.1, 3.2, Interval and graphs of inequalities, additive and multiplicative prop of equality Review for exam II is available	**25.**	**26.**	**27.**
	28.	**29.** Review for exam II	**30.**	**31. Exam II**	**1.**	**2.**	**3.**
November	**4.**	**5.** 3.3 Factoring and the zero product prop.	**6.**	**7.** 3.4 Radical and Power equations.	**8.**	**9.**	**10.**
	11.	**12.** 3.5 Quadratic equations by completing the square and the quadratic formula.	**13.**	**14.** 4.1, 4.2 Rect. Coord. System, Midpoint and Dist. between two points, and graphing solutions to equations, equations of circles.	**15.**	**16.**	**17.**
	18.	**19.** 4.3 Lines and linear equations in two variables, slope-intercept and point-slope form for equations of lines.	**20.**	**21.** 4.3 on lines continued, 4.4 Linear models and solutions of systems of equations and inequalities by graphing. Review for exam III.	**22.**	**23.**	**24.**
	25.	**26.** Review for exam III	**27.**	**28. Exam III**	**29.**	**30.**	**1.**
Dec.	**2.**	**3.** Elimination and substitution methods for solving linear systems.	**4.**	**5.** 4.5 Mixture problems via systems.	**6.**	**7.**	**8.**
	9.	**10.** 4.6 Rate problems and review for final	**11.**	**12.** Review for final			
	Final exam is on Wed. Dec. 19 1:00-3:00 PM						